Listing of Claims:

This listing of claims reflects all claim amendments and replaces all prior versions, and listings, of claims in the application. In brief, the present communication makes no amendments to the claims.

1.–49. (Canceled)

50. (Previously Presented) A method of detecting addition or removal of a phosphate group to or from a substrate, comprising:

contacting a luminescent peptide with a binding partner that binds specifically to the peptide only if the peptide is phosphorylated, wherein the binding partner includes gallium involved in binding between the binding partner and the peptide, and wherein the peptide is a substrate for an enzyme that catalyzes addition or cleavage of a phosphate group to or from the peptide; and

measuring luminescence polarization from the luminescent peptide, wherein the amount of measured luminescence polarization can be related to the extent of binding between the luminescent peptide and the binding partner.

51. (Previously Presented) The method of claim 50 further comprising:

correlating the measured luminescence polarization with kinase activity.

52. (Previously Presented) The method of claim 50 further comprising:

correlating the measured luminescence polarization with phosphatase activity.

53. (Previously Presented) The method of claim 50, wherein the steps of contacting and measuring are performed in a microplate well.

54. (Previously Presented) The method of claim 50, wherein the step of measuring luminescence polarization includes illuminating the sample with polarized light.

55. (Previously Presented) The method of claim 50 further comprising:

exposing the luminescent peptide to the enzyme, in a reaction mixture, to catalyze phosphorylation or dephosphorylation of the peptide.

56. (Previously Presented) The method of claim 55, wherein there is at least one phosphate group on the luminescent peptide, further comprising:

catalyzing formation of unlabelled phosphorylated protein in the reaction mixture to competitively bind to the binding partner.

57. (Previously Presented) The method of claim 55, wherein the binding partner is capable of binding specifically to a phosphorylated protein substantially without regard to the particular amino acid sequence of the protein.

58. (Previously Presented) The method of claim 55 further comprising:

adding a stop solution to the reaction mixture, following the step of exposing, to stop the reaction catalyzed by the enzyme, wherein the stop solution includes a chelator.

59. (Previously Presented) The method of claim 55 further comprising:

contacting at least one of the luminescent peptide and the enzyme with a candidate modulator, prior to the step of measuring luminescence polarization.

60. (Canceled)

61. (Previously Presented) The method of claim 59, wherein the step of contacting at least one of the luminescent peptide and the enzyme with a candidate modulator includes a step of contacting the enzyme with a candidate modulator before the step of exposing the luminescent peptide to the enzyme.

62. (Previously Presented) The method of claim 55, wherein the step of exposing precedes the step of contacting.

63. (Previously Presented) The method of claim 55, wherein the step of exposing catalyzes a reaction having an end point, and wherein the step of measuring is performed at least substantially at the end point of the reaction.

64. (Previously Presented) The method of claim 55, wherein the step of exposing catalyzes a reaction having an end point, and wherein the step of measuring is performed at different times during the reaction before the end point.

65. (Previously Presented) The method of claim 50, wherein the step of measuring is performed after the step of contacting without separation of bound and unbound species of the luminescent peptide.

66. (Previously Presented) The method of claim 50, wherein the steps of contacting and measuring are performed a plurality of times with the luminescent peptide disposed in different wells of a microplate.